

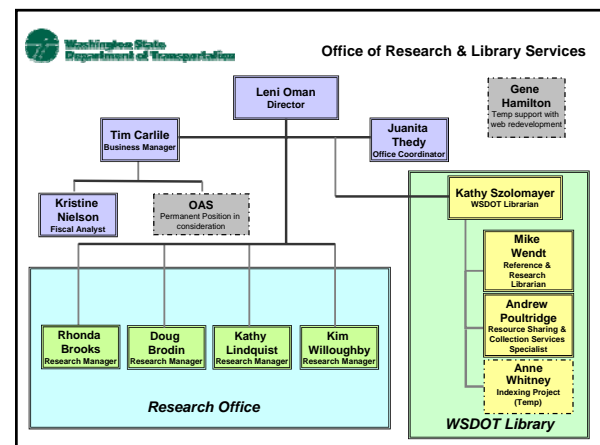
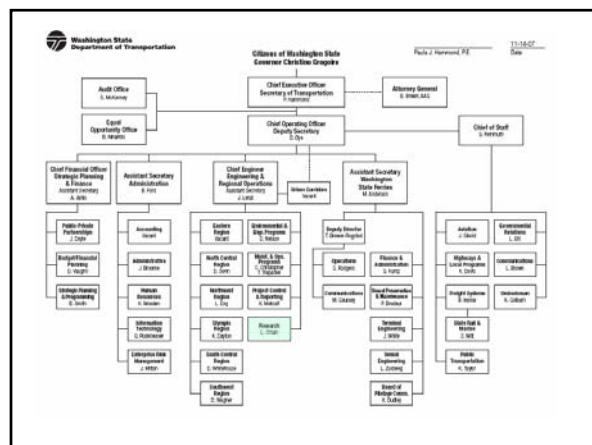
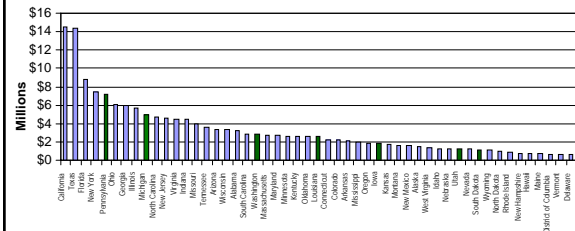
WSDOT Research & Library Services Structure

Leni Oman
Director, Office of Research & Library Services
Washington State Department of Transportation

December 4, 2007



2007 SPR Part 2



Changes to WSDOT Research Program

- Established Standing Research Advisory Committees
 - To improve strategic focus of research projects
 - To improve awareness of all research funding programs
 - To improve support for the implementation of research results
- Develop research problem statements internally
 - To focus on agency priority needs
- Identify principal investigators through competition
 - To provide for new researchers, new perspectives, and a strong research third party view
- Established a new selection process for pooled fund projects
- Created awareness of the Client Sponsored Research activities



Changes to WSDOT Research Program

Initiated new programs:

- Quick Response Research
 - to meet emergent needs
- Student Research
 - to meet the need for simple study needs & stimulate student interest in transportation
- Transportation Synthesis Reports
 - built on the success Wisconsin has in meeting information needs of the agency

WSDOT Library joins Research Office

- Increases technical transfer capabilities of the office and much more...



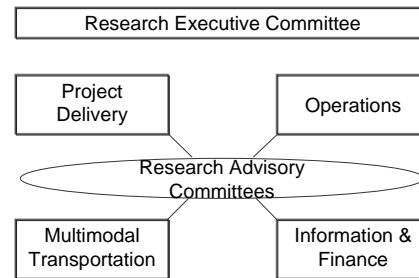
Research Office Functions

- Assist with Research Study Design
- Conduct Simple Surveys
- Connect staff to past and ongoing research
- Collate and Market Agency Research Needs
- Contract with Universities
- Fund Research Activities
- Direct and Managing Research Activities
- Support Implementation of Research Results
- Synthesis of practice

<http://www.wsdot.wa.gov/Research>



WSDOT Research Management



Role of the Research Executive Committee

- Defining research goals that are the basis for project selection
- Establishing the selection committees
- Approving the funded research program
- Reviewing key research findings
- Evaluating and finalizing recommendations for implementation of research findings

The REC members are:

- Assistant Secretary, Engineering and Regional Operations Division
- Director, Strategic Planning and Programming
- Director, Environmental and Engineering Programs
- Director, Maintenance and Operations Programs
- Chief of Staff, or designee
- Regional Administrator, Eastern Washington
- Regional Administrator, Western Washington



Role of the Research Advisory Committees

- Creation of research problem statements
- Prioritize research needs : address critical agency issues and aligns with the strategic direction of the agency
- Recommend problem statements to the REC
- Recommend technical monitors for the selected projects
- Provide a forum to discuss competing needs and help better define an appropriate balance
- Receive reports and presentations on research results, discuss the recommendations and funding options for implementation
- Provide information on research focus areas
- Provide input for national research participation
- Provide input and feedback on research programs and procedures.



Project Delivery RAC

- Bridges and Structures
- Construction and Materials
 - Geotechnical
 - Pavements
- Design
 - Context Sensitive Design
 - Design Build
 - Geometric Design
 - Hydraulics
 - Safety
- Environment
- Real Estate



Operations RAC

- Communications
- Congestion
- Intelligent Transportation Systems
- Traffic Management
- Maintenance
- Roadside Management
- Safety
- Security



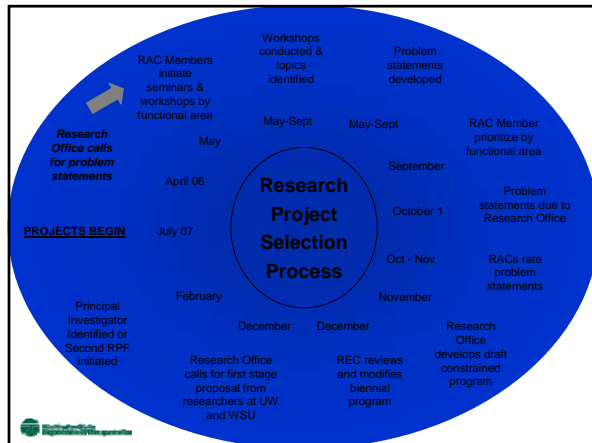
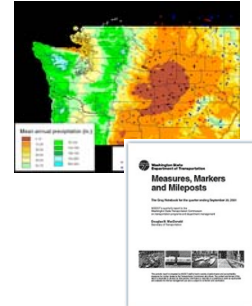
Multimodal Transportation RAC

- Aviation
- Freight
- Highways
- Planning
- Urban Planning
- Public Transportation
- Transportation Demand Management
- Rail
- Washington State Ferries



Information and Finance RAC

- Data
 - Collection
 - Management
- Funding
- Information Technology
- Performance Measures
- Programming
- Workforce Management
- Access Management



WSDOT Research Problem Statement

1. Problem Title
2. Research Problem Statement: *Why is this an issue for WSDOT? What is the problem?*
3. Research Objective: *How is research anticipated to contribute to a solution?*
4. Estimate Of Problem Funding And Research Period
5. Urgency, Payoff Potential, And Implementation: *What do you hope to gain from the research? How do you expect the research will be used?*
6. Person(s) Developing The Problem Statement: *Name, email address, and phone number.*
7. Other Offices Within WSDOT Likely To Have Interest
8. Recommended Technical Monitor
9. Date
10. Does The Project Have National, Regional/Multi-state or Washington Only Implications?



RAC Rating Criteria Variations on a NCHRP Theme

- Does the proposed study represent a current problem that needs researching?
- Is the proposed study appropriate for NCHRP or should it be performed elsewhere?
- Is the problem of nationwide interest?
- Are similar efforts already underway elsewhere? If so, will the proposed study unnecessarily duplicate the efforts of others?
- What is the probability of the proposed research being successful?
- If the research is successful, what is the anticipated return with respect to its cost?



REC Criteria for Program Selection

- RAC recommended priorities.
- Costs for proposed projects.
- Balance of the program across functional areas.
- Reasonable workloads.
- How research activities support agency goals.
- Urgency for results.



Principal Investigator Selection

- | | |
|----------------------------|------------|
| ▪ Qualifications/Education | 0 to 5 pts |
| ▪ Related Experience | 0 to 5 pts |
| ▪ Research Approach | 0 to 5 pts |
| ▪ References | 0 or 1 pt |
| ▪ Matching funds | 0 or 1 pt |



Summary of Current Research Activities

Active Projects August 07

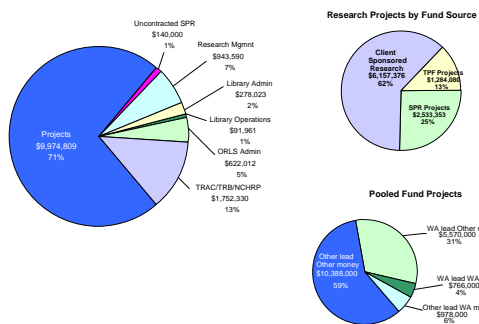
- 53 State Planning & Research Projects
- 39 Client Sponsored Research Projects
- 27 Transportation Pooled Fund Projects
 - * 9 WSDOT Led TPF Projects

WSDOT Employees on Committees and Panels

- 35 employees on 57 TRB Technical Committees
- 49 employees on 77 NCHRP Panels
- 5 employees on 8 Advisory and Expert Task Groups



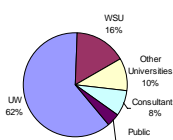
Total WSDOT Research Program Budget 05-07



Contracting Research with External Organizations

- Most research is conducted by external organizations
 - Washington universities
 - Other state agencies
 - Universities in other states/countries
 - Private organizations
- Preference is given to the Washington State Transportation Center (TRAC)
- Establish Master Agreements
- Solicit RFQs
- Projects initiated through task agreements
- Unique contracts developed as necessary

Research Institutions Conducting Work



Technical Transfer

Telling the stories of success is key to maintaining the relevance and effectiveness of the WSDOT Research Program. If research is understood to be valuable, it is more likely the culture to maintain and improve support for research will follow.

That's not to say this is easy. We're busy people. Short, focused messages that convey the benefits of work are important. Look for appropriate forums to share information. Use a variety of formats and delivery methods.



Implementing Research Results

- Implementation expectations are included in the research proposal and managed throughout the project
- An implementation plan is developed by the Technical Monitor
- Research Reports identify recommended uses of results
- A Research Note is developed to market the research results
- Implementation expectations are reported to Research Advisory Committees and the Research Executive Committee
- Effort made to quantify return on investment
- WSDOT is participating in the testing of the Performance Measures database



Increasing Program Awareness

- A **Communication Plan** has been developed to identify key audiences and messages we seek to convey.
- **WSDOT Research web site** includes a description of the research program, copies of recent research reports, a form for submitting research proposals. The web site includes the Research Procedures Manual, office newsletter and a collection of standard forms, and links to a variety of useful sites and other information. <http://www.wsdot.wa.gov/Research/>
- The **TRAC Biennial Report** is prepared every two years and summarizes many of the research activities conducted at the University of Washington and Washington State University – primarily but not exclusively with funding from WSDOT. <http://depts.washington.edu/trac/otherpubs/index.html>
- **Research folios** are prepared as a means to give a brief overview of aspects of the WSDOT Research Program. Folios have been prepared to describe Transportation Research, WSDOT Research Management, and Transportation Research Programs. <http://www.wsdot.wa.gov/Research/AboutUs.htm>
- **Open House:** A WSDOT Research Open House was conducted in 2006. It included displays of the research process and research results, a videoconference about TRAC and TransNow, and visits by faculty.



Topic/Project Specific Tech Transfer Tools

- **Transportation Synthesis Reports** of literature, web pages, surveys and other state of the practice information.
- **Project Status Reports** **NEW!** The status reviews are being modeled after quarterly project reviews of the agency's construction projects.
- **Research Final Reports** are distributed to all state research programs, national libraries, repositories and other interested entities. All reports are entered into the Washington State Library and WSDOT Libraries where they are accessible through WorldCat and TLCat. They are also available through a searchable online database. <http://www.wsdot.wa.gov/Research/Reports/>
- **Research Notes** provide the end user with a summary review of a research project and describes how to implement the work in the field. They are designed to help the lay person understand how to use the research through photographs and more instructional details. <http://www.wsdot.wa.gov/Research/WorkingNotes.htm>
- **Workshops/Seminars:** At the conclusion of selected research projects, a workshop or presentation may be conducted to explain the research and discuss the findings.
- **LTAP Newsletter:** The WSDOT Technology Transfer (T2) Center quarterly newsletter includes a section from the Research Office in each publication. <http://www.wsdot.wa.gov/TA/T2Center/T2Bulletin/2007Summer.pdf>



Transferring the Knowledge of Other DOTs

Research Managers review completed research reports or information from other states and forward those that seem relevant to agency staff and Principal Investigators, sometimes pointing out the specific section of interest.

Thank you, that's a useful study. Charlotte Claybrooke, Bicycle/Pedestrian Program Manager.

Subject: Research Report from Colorado: Analysis of Bicycle-Related and Pedestrian-Related Roadway Crashes

Thanks Kathy-- your timing is excellent, too! Jeff Doyle, Director, Public Private Partnerships

Subject: TxDOT: Summary Report: Development of a Toll Viability Screening Tool

Well over a year ago you sent me a report regarding the ecological assess of a wetland mitigation bank in North Carolina. The site had substantial groundwater inputs on one side of the wetland and groundwater discharge on another side. The piezometer arrangement they used to monitor groundwater movement into, through, and out of the wetland was referenced when we were considering where to place piezometers at three alternative stormwater flow control sites (restore/enhance wetlands to provide stormwater flow control rather than vaults) on the I-5 Mellen Street to Grand Mound project. The projects were different but the report gave me insight that I hadn't gotten from other reports or field experience. Now I can't quantify the value of the information because piezometer locations were a team decision, but the information was valuable to me.

Dick Gersib, Watershed Program Manager



Project Specific Tech Transfer Tools

UNDER CONSTRUCTION

- A **Research Listserve** is in development and will be used to push information about research program activities and research results to interested employees.
- The **WSDOT Lessons Learned Database** may be a mechanism to distribute new methods to the user community.
- **Awards** received for research projects are documented and shared through the web page.



How do we ensure Tech Transfer occurs?

- Encourage a culture of innovation
- Involve Division and Office Directors in the evolution and selection of research projects.
- Require Technical Monitor and Researcher to think of implementation needs, including technical transfer, when the project is developed.
- Include training in the research project scope when appropriate.
- Encourage the inclusion of technical staff in the conduct of the research project to foster interest in and use of the products.
- Provide "excuse-remover" funding as needed
- Build and facilitate relationships with WSDOT customers and researchers.



A Culture of Innovation

A work culture that supports investigation

- Business plan goals identify research objectives
- Position Descriptions include work tasks in support of research and testing
- Workload is managed to include research activities
- Management expects research project completion and monitors progress
- Research activities are results oriented and results are quickly and obviously incorporated into agency work methods/policy
- Research results are actively marketed through written summaries and advocacy in discussion
- Research benefits are captured and used as justification for additional resource devoted to investigation

An environment of innovation

- Experimental approaches are encouraged
- Employees are encouraged to participate in national research activities



A Culture of Innovation

A strong network geared to problem solving

- Relationships with researchers are developed and maintained beyond individual projects
- Connections with other states foster sharing of research results and partnering to address knowledge gaps
- Research results are used to influence national guidance through participation in national meetings
- Certainly, support by the leadership of the department can help increase the expectation to use research as a tool in addressing agency challenges. And being an innovative agency can help attract new employees.
- Lastly, it's important to be nimble, to think outside of traditional research and help investigate new areas of need. Programs should also be flexible – quick turn around research, synthesis studies, surveys may help meet the needs of the department. Research Programs should flex as the needs of the organization change.



Challenges to Technical Transfer

- Technical Monitors do not have adequate time to develop implementation plans and information for Research Notes.
- Many technical staff targeted to review of draft reports do not review them. This can lead to "late objectors" to use South Dakota's phrase. In accurate information can end up in published documents that are challenging to retract.
- Resources within the Research and Library Services Office are not adequate to maintain and develop material to push research results to user communities as much as needed.



Outreach Activities

- Research folios
- WSDOT Research website
- LTAP Newsletter
- Campus Visits
- TRAC Biennial Report
- Research Reports
- Research Notes
- Research Open House



WSDOT Library Services

- Ready Reference
- Literature Reviews
- Search Techniques
- News Alerts
- Information Organization
- Lending Books
- Indexing support

<http://www.wsdot.wa.gov/Library/>

